(FILE 'HOME' ENTERED AT 14:13:52 ON 03 NOV 2000)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, SCISEARCH' ENTERED AT 14:14:06 ON 03 NOV 2000

L1	649048	S	VESSEL? OR CUVETTE?
L2	576	S	L1(P)CHEMILUMINESC?
L3	34	S	L2 AND SUBSTR?
L4	15		DUPLICATE REMOVE L3 (19 DUPLICATES REMOVED)
L5	502	S	L1 AND OPAQU?
L6	0	S	L5 AND CHEMILUM?
L7	2777	S	L1 AND (OPAQ? OR DARK?)
L8	288	S	L7 AND CHEMI?
L9	243		DUPLICATE REMOVE L8 (45 DUPLICATES REMOVED)
L10	69	S	L9 AND PHOT?
L11	84	S	L4 OR L10
L12	84		DUPLICATE REMOVE L11 (0 DUPLICATES REMOVED)
L13	26	S	L12 AND (IMMUN? OR SUBST?)
L14	0	S	L12 AND SHOE?
L15	49140	S	L1 AND AUTO?
L16	288	S	L15 AND (OPAQ? OR DARK?)
L17	175		DUPLICATE REMOVE L16 (113 DUPLICATES REMOVED)
L18	20	S	L17 AND (LUMINESC? OR CHEMI?)
L19	96	S	L11 OR L18
L20	96		DUPLICATE REMOVE L19 (0 DUPLICATES REMOVED)
L21	0	S	L20 AND SHOE?
L22	32	S	L20 AND (IMMUN? OR SUBST?)
L23	0	S	GICQUEL/AU
L24	0	S	LENTWOJT/AU
L25	24	S	GICQUEL
L26	0	S	LENTWOJT
L27	24	S	L25

#25

L22 ANSWER 1 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 2000:178675 BIOSIS
DOCUMENT NUMBER: PREV200000178675
TITLE: Mammalian Cu-containing amine oxidases (CAOs): New methods of analysis, structural relationships, and possible functions.
AUTHOR(S): Houen, Gunnar
SOURCE: APMIS, (1999) Vol. 107, No. Suppl. 96, pp. 1-46. ISSN: 0903-4641.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

AB This thesis describes new and original experimental results on Cu-dependent amine oxidases (CAOs), which show that these enzymes can be conveniently and specifically detected in situ using a peroxidase-coupled activity staining method with 4-Cl-1-naphtole as hydrogen donor **substrate**. Even more sensitive in situ detection can be achieved using a **chemiluminescence**-based coupled peroxidase assay which was applied to show that human placenta CAO activity is confined to maternal **vessels**. A general purification soeme for CAOs is described, and applied to purification of different CAOs. Peptide maps and **immunological** crossreactivity studies with monoclonal antibodies raised against the purified enzymes showed that they were closely related.

Amino acid sequence data for the bovine serum CAO showed that they form a separate group (E.C. 1.4.3.6) with no homology to other enzymes. A cDNA sequence was obtained on the basis of the amino acid sequence data, and this was found to encode a bovine lung CAO, related to bovine serum CAO. The genes for bovine lung and bovine serum CAO are characterised, and Southern blotting analysis of bovine chromosomal DNA shows the existence of a least one more bovine CAO. The purification of human neutrophil CAO is attempted, but it is described how lactoferrin, a protein with many properties in common with CAOs, and with a low degree of sequence identity can account for many observations on human neutrophil CAO. The products of bovine serum CAO oxidation of polyamines are characterised, and 3-aminopropanol is found to be the principal aminoaldehyde produced. Finally, a polyamine-stimulated binding of human placenta CAO to single-stranded DNA is described, and it is reported that the DNA-bound CAO is enzymically active and that the oxidation of DNA-bound polyamines leads to degradation of DNA. In addition to the experimental results, the properties of polyamines and Cu-dependent amine oxidases are reviewed. The polyamines spermidine and spermine interact specifically with nucleic acids and several other molecules. They are synthesised from putrescine, which is a key regulatory molecule formed from ornithine by ornithine decarboxylase, a highly inducible and regulated enzyme. The polyamines can be converted to putrescine by CAOs or spermidine/spermine acetyltransferase and polyamine oxidase. Putrescine is degraded by CAOs, which are also involved in degradation of histamine, a mediator of inflammatory processes. CAOs catalyse the general reaction: R1CH2NHR2 + O2 + H2O fwdarw R1CHO + R2NH2 + H2O2 and in addition to the catabolism of putrescine and histamine CAOs are involved in regulation of growth and apoptosis by to the generation of aminoaldehydes and hydrogen peroxide which have growth inhibitory properties. Several homologous CAOs have been

purified and charac ised and they form a family wi two subgroups. They are homodimers with a relative molecular weight of 180000 and contain Cu2+ and a modified tyrosine, topaquinone, in the active site. CAOs are present in most tissues with highest amounts in intestine, kidneys, liver and placenta, but the cellular distributions and functions of CAOs are still poorly described, partly due to the use of many different assays and partly due to a broad **substrate** specificity of the enzymes. However, polyamines and CAOs seem to form a universal system contributing to regulation of growth, differentiation, and apoptosis.

L22 ANSWER 2 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1999:334634 BIOSIS
DOCUMENT NUMBER: PREV199900334634
TITLE: Acidic and non-acidic products from the **photo** -oxidation of the crude oil component dibenzothiophene dissolved in seawater.
AUTHOR(S): Traulsen, Fridtjof; Andersson, Jan T. (1); Ehrhardt, Manfred G.
CORPORATE SOURCE: (1) Department of Analytical Chemistry, University of Muenster, Wilhelm-Klemm-Str. 8, D-48149, Muenster Germany
SOURCE: Analytica Chimica Acta, (June 14, 1999) Vol. 392, No. 1, pp. 19-28.
ISSN: 0003-2670.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
AB A solution of dibenzothiophene in membrane-filtered natural seawater was exposed to sunlight in a quartz **vessel**. The same solution in an amber glass **vessel** served as the **dark** control. Acidic **photoproducts** were isolated, identified and quantified from seawater, employing solid phase extraction and HPLC in ion-pair mode. This extraction procedure allows the determination of aromatic sulphonic as well as carboxylic acids in the low ppb-range in seawater and makes a separation between these two **substance** classes possible. 2-Sulphobenzoic acid and benzothiophene-2,3-dicarboxylic acid were identified as the main products. The two isomeric benzothiophenemonocarboxylic acids as well as an isomer of thiophenetricarboxylic acid were also detected by GC-MS analysis in significant concentrations after methylation. Non-acidic products were also isolated and analysed by gas chromatography using the atomic emission detector and GC-MS. After 8 days of exposure to summer sunlight at Kiel (54degree20' N) the concentration of dibenzothiophene had decreased to 60% of the initial value. The intensities of impinging solar UVA- and UVB-radiation were recorded to facilitate the extension of the observed **photo**-oxidation rate to other light regimes.

L22 ANSWER 3 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1998:253772 BIOSIS
DOCUMENT NUMBER: PREV199800253772
TITLE: Superoxide as an intermediate signal for serotonin-induced mitogenesis.
AUTHOR(S): Lee, Sheu-Ling (1); Wang, Wei-Wei; Fanburg, Barry L.
CORPORATE SOURCE: (1) New England Med. Cent., Pulmonary Critical Care Div., 750 Washington St., NEMC No. 265, Boston, MA 02111 USA
SOURCE: Free Radical Biology & Medicine, (March 15, 1998) Vol. 24, No. 5, pp. 855-858.
ISSN: 0891-5849.
DOCUMENT TYPE: Article
LANGUAGE: English
AB Serotonin (5-HT) stimulates tyrosine phosphorylation and proliferation of

bovine pulmonary ar[redacted]y smooth muscle cells (SMC) th[redacted]ugh its active transport (Lee et a[redacted] 1991). The present studies sho[redacted]hat 5-HT also rapidly elevates O2.- formation by these cells within 10 minutes as measured by a lucigenin-enhanced **chemiluminescence** assay. The O2.- free radical quencher, Tiron, and N-acetyl-cysteine, a **substrate** for glutathione, block both the 5-HT-induced formation of O2.- and cellular proliferation. Similarly, inhibition of 5-HT transport with imipramine or treatment of cells with diphenyliodonium, a NAD(P)H oxidase inhibitor, block both 5-HT-induced elevation of O2.- and cellular proliferation. Alpha-hydroxyfarnesylphosphonic acid, an inhibitor of p21ras, also blocks 5-HT-induced proliferation. Endothelial cells from the same **vessel** show neither 5-HT-induced proliferation nor stimulation of O2.- formation. We conclude that 5-HT induced cellular proliferation of SMC through signaling pathways that utilize its transport system and O2.- formation.

L22 ANSWER 4 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1998:169735 BIOSIS
DOCUMENT NUMBER: PREV199800169735
TITLE: Demonstration of **vessels** in CNS and other organs by AMG silver enhancement of colloidal gold particles dispersed in gelatine.
AUTHOR(S): Danscher, Gorm (1); Andreasen, Arne
CORPORATE SOURCE: (1) Dep. Neurobiol., Inst. Anatomy, Univ. Aarhus, DK-8000 Aarhus C Denmark
SOURCE: Journal of Neuroscience Methods, (Dec. 1, 1997) Vol. 77, No. 2, pp. 175-181.
ISSN: 0165-0270.
DOCUMENT TYPE: Article
LANGUAGE: English
AB We present a new **autometallographic** technique for demonstrating **vessels** and other small cavities at light microscopy (LM) and electron microscopy (EM) levels. It is possible to obtain detailed knowledge of the 3-D appearance of the vascular system by exchanging blood with a 40degreeC, 8% gelatine solution containing colloidal gold particles (gold-gelatine solution, GGS) and ensuing silver enhancement of the gold particles by **autometallography** (AMG). The GGS-AMG technique demonstrates the vascular system as a **dark** web that can be studied in cryostat, vibratome, methacrylate, paraffin and Epon sections at all magnifications. The infused GGS becomes increasingly viscous and finally becomes rigid when the temperature falls below 20degreeC. An additional advantage of this technique is the fact that none of the tested counterstains or **immunotechniques** interfere with this AMG approach. The GGS-AMG technique is demonstrated on rat brains but can be applied to any organ. We believe that the present technique is valuable for both experimental studies and routine pathology.

L22 ANSWER 5 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1998:143382 BIOSIS
DOCUMENT NUMBER: PREV199800143382
TITLE: Nitric acid vapor effects on forest trees: Deposition and cuticular changes.
AUTHOR(S): Bytnerowicz, A. (1); Percy, K.; Riechers, G.; Padgett, P.; Krywult, M.
CORPORATE SOURCE: (1) PSW Res. Stn., USDA Forest Serv., 4955 Canyon Crest Dr., Riverside, CA 92507 USA
SOURCE: Chemosphere, (Feb., 1998) Vol. 36, No. 4-5, pp. 697-702.
ISSN: 0045-6535.
DOCUMENT TYPE: Article
LANGUAGE: English
AB Nitric acid (HNO3) vapor is an important component of **photochemical** smog and occurs in high concentrations in forests of

the San Bernardino [redacted] San Gabriel Mountains of southern California. Ponderosa pine (Pin[redacted] ponderosa Dougl. ex. Laws.) an[redacted]alifornia black oak (Quercus kelloggii Newb.) seedlings were exposed to H15NO3 in a series of short-term experiments performed in a Teflon **cuvette** system. The highest H15NO3 deposition occurred on foliar surfaces of both species. **Substantial** transcuticular transport of the pollutant into the leaf interior and stems and roots of two species was determined. Exposures of pines for 12 h in light to 50 ppb H15NO3 caused deterioration of needle cuticle (lesions and collapsed cells). After 12 h of **dark** exposures to 200 ppb H15NO3 epicuticular wax structure of oak started to disintegrate and trichomes showed a wilting appearance. Exposures to H15NO3 changed **chemistry** of epicuticular waxes of pines-content of fatty acids decreased and alkylesters increased. Results of this study showed a potential for HNO3 phytotoxic effects in southern California forests in addition to the observed damage caused by ozone.

L22 ANSWER 6 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1998:44749 BIOSIS
DOCUMENT NUMBER: PREV199800044749
TITLE: Endometrial alpha-2 macroglobulin: Localization by in situ hybridization and effect on mouse embryo development in vitro.
AUTHOR(S): Sayegh, Raja A.; Tao, Xiao Jing; Leykin, Lucy; Isaacson, Keith B. (1)
CORPORATE SOURCE: (1) Vincent Memorial Obstet. Gynecol. Serv., Wang Ambulatory Care Cent. II, Massachusetts Gen. Hosp., Boston, MA 02114 USA
SOURCE: Journal of Clinical Endocrinology & Metabolism, (Dec., 1997) Vol. 82, No. 12, pp. 4189-4195.
ISSN: 0021-972X.
DOCUMENT TYPE: Article
LANGUAGE: English

AB alpha-2 macroglobulin (A2M) is a 718,000-kDa broad spectrum plasma protease inhibitor whose production by the human endometrium was recently reported. The multifunctional A2M receptor, also known as low-density lipoprotein receptor-related protein, was also recently **immunolocalized** to the endometrial stroma. The objective of this study was to further characterize the endometrial site of expression of A2M, and to study its effects on mouse embryo development in vitro, to gain some insight into the functional significance of its endometrial production. Formalin-fixed, paraffin-embedded human endometrium from hysterectomy and endometrial biopsy specimen was used for in situ hybridization analysis, with 35S-labeled riboprobes representing subcloned A2M complementary DNA (cDNA) fragments. Duplicate sections of human endometrium were hybridized with sense and antisense probe and coated with **photographic** emulsion. Resultant **autoradiograms** were analyzed qualitatively by light- and **darkfield** microscopy and quantitatively by a computerized analysis of the signal intensity. **Immunohistochemistry** and **immunoblotting** for endometrial tissues were performed using an affinity-purified polyclonal antibody to human A2M. The effect of A2M on mouse embryo development was studied by exposure of one cell mouse embryo in culture to physiological concentrations of biologically active and inactive A2M. Expression signals for A2M were more numerous and intense in the secretory endometrium, compared with proliferative endometrium. Endothelial cells lining the endometrial blood **vessels** seemed to be the main source of A2M expression. The A2M expression signals in secretory endothelium were 2- to 3-fold stronger than the proliferative endothelium, suggesting

transcriptional activation of A2M expression in the secretory endothelium.

Glandular expression was observed in secretory endometrium from two patients with endometriosis. Ectopic endometrial tissues also produced A2M. A2M at concentrations of 400-500 mumol/L significantly inhibited blastocyst development of mouse embryos in vitro. A2M is expressed predominantly by the endometrial endothelial cells and may be involved in endometrial physiology. Physiological concentrations of A2M inhibit mouse embryo development in vitro, suggesting that endometrial production of A2M may play a role in regulating preimplantation embryo development.

L22 ANSWER 7 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1997:176717 BIOSIS
DOCUMENT NUMBER: PREV199799468430
TITLE: Weibel-Palade bodies as a storage site of calcitonin gene-related peptide and endothelin-1 in blood **vessels** of the rat carotid body.
AUTHOR(S): Ozaka, Takatoshi (1); Doi, Yoshiaki; Kayashima, Kotaro; Fujimoto, Sunao
CORPORATE SOURCE: (1) Dep. Anatomy, Univ. Occupational Environmental Health, Sch. Med., Kitakyushu 807 Japan
SOURCE: Anatomical Record, (1997) Vol. 247, No. 3, pp. 388-394. ISSN: 0003-276X.
DOCUMENT TYPE: Article
LANGUAGE: English.

AB Background: The vasculature of the carotid body has been considered to play a role in the regulation of blood flow into this organ. This light and electron microscope **immunocytochemistry** deals with endothelium-dependent vasomotion by vasodilatory calcitonin generelated peptide (CGRP) and vasoconstrictive endothelin-1 (ET-1). Methods: After adult male rats were perfused with a solution of periodatelysine-paraformaldehyde through the left ventricle, the carotid artery bifurcations were isolated and utilized for light and electron microscope **immunolabelings** with CGRP and ET-1 primary antisera. Results: By light microscope **immunocytochemistry, immunoreactions** to CGRP were seen along the endothelium of the carotid body artery (CBA) and its branches, and those of ET-1 were observed along the endothelium of the intralobular capillaries in addition to the above **vessels**. By **immunoelectron** microscopy, **immunoreactive** gold particles of CGRP and ET-1 were identified in the rough endoplasmic reticulum (rER) and in the Weibel-Palade (WP) bodies of endothelial cells of the CBA and its branches. Colocalization of both **immunoreactive** gold particles was observed in the same WP body. **Immunoreactive** gold particles of CGRP were also identified in the rER, Golgi apparatus, and specific granules of the **dark** glomus cells. Conclusions: Conceivably, CGRP and ET-1 are synthesized in the rER of these endothelial cells and are stored in the WP bodies for the **autoregulation** of blood flow.

L22 ANSWER 8 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1996:438733 BIOSIS.
DOCUMENT NUMBER: PREV199699152339
TITLE: Chemiluminescent **immunoenzyme** biosensor with a thin-layer flow-through cell: Application for study of a real-time bimolecular antigen-antibody interaction.
AUTHOR(S): Osipov, Alexander P. (1); Zaitseva, Natalia V.; Egorov, Alexey M.
CORPORATE SOURCE: (1) Div. Chem. Enzymol., Dep. Chem., M.V. Lomonosov Moscow State Univ., Moscow 119899 Russia
SOURCE: Biosensors & Bioelectronics, (1996) Vol. 11, No. 9, pp. 881-887. ISSN: 0956-5663.
DOCUMENT TYPE: Article

LANGUAGE: Engl[redacted]h
AB A simple flow enzym[redacted]system for real-time continuous [redacted]onitoring of interaction of biological molecules has been developed. It relies upon a thin-layer flow-through cell placed directly into the measuring compartment of the luminometer. One ligand (antibody) is immobilized on the inner surfaces of the flow **cuvette**, and a second ligand (antigen) labeled with a peroxidase molecule moves through the flow cell. The quantity of the complex on the surface of the cell may be monitored by measurement intensity of **chemiluminescence** in the reaction of peroxidase label with **substrates** (p-iodophenol, luminol and hydrogen peroxide). In such a way one can detect in a real-time regime the kinetics of association (or dissociation) of the complex labeled ligand-receptor on the surface of the **cuvette**. Due to the small thickness of the flow cell the diffusion limitations of interaction for two kinds of biomolecules (soluble and immobilized) are negligible, so the resulting intensity of **chemiluminescent** signal reflects the kinetics of interaction between soluble and immobilized components. The system may be successfully used for molecular recognition studies, analyzing the kinetics of bimolecular interaction and for concentration determination.

L22 ANSWER 9 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1996:421826 BIOSIS
DOCUMENT NUMBER: PREV199699144182
TITLE: Circulating plasma xanthine oxidase contributes to vascular dysfunction in hypercholesterolemic rabbits.
AUTHOR(S): White, C. Roger; Darley-Usmar, Victor; Berrington, William R.; McAdams, Michelle; Gore, Jeri Z.; Thompson, J. Anthony; Parks, Dale A.; Tarpey, Margaret M.; Freeman, Bruce A. (1)
CORPORATE SOURCE: (1) Dep. Anesthesiol., 946 Tinsley Harrison Tower, 619 South 19th St., University Alabama Birmingham, Birmingham, AL 35233-6810 USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (1996) Vol. 93, No. 16, pp. 8745-8749.
ISSN: 0027-8424.
DOCUMENT TYPE: Article
LANGUAGE: English
AB Reactive oxygen species play a central role in vascular inflammation and atherogenesis, with enhanced superoxide (O-2.-) production contributing significantly to impairment of nitric oxide (.NO)-dependent relaxation of **vessels** from cholesterol-fed rabbits. We investigated potential sources of O-2.--production, which contribute to this loss of endothelium-dependent vascular responses. The vasorelaxation elicited by acetylcholine (ACh) in phenylephrine-contracted, aortic ring segments was impaired by cholesterol feeding. Pretreatment of aortic **vessels** with either heparin, which competes with xanthine oxidase (XO) for binding to sulfated glycosaminoglycans, or the XO inhibitor allopurinol resulted in a partial restoration (36-40% at 1 mu-M ACh) of ACh-dependent relaxation. Furthermore, O-2.--dependent lucigenin **chemiluminescence**, measured in intact ring segments from hypercholesterolemic rabbits, was decreased by addition of heparin, allopurinol or a chimeric, heparin-binding superoxide dismutase. XO activity was elevated more than two-fold in plasma of hypercholesterolemic rabbits. Incubation of vascular rings from rabbits on a normal diet with purified XO (10 milliunits/ml) also impaired .NO-dependent relaxation but only in the presence of purine **substrate**. As with **vessels** from hypercholesterolemic rabbits, this effect was prevented by heparin and allopurinol treatment. We hypothesize that

increases in plasma [redacted]olesterol induce the release o[redacted]YO into the circulation, where [redacted] binds to endothelial cell glyc[redacted]minoglycans. Only in hypercholesterolemic **vessels** is sufficient **substrate** available to sustain the production of O-2.- and impair NO-dependent vasorelaxation. Chronically, the continued production of peroxynitrite. (ONOO-) which the simultaneous generation of NO and O-2.- implies, may irreversibly impair **vessel** function.

L22 ANSWER 10 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1996:101880 BIOSIS
DOCUMENT NUMBER: PREV199698674015
TITLE: In situ detection of diamine oxidase activity using enhanced chemiluminescence.
AUTHOR(S): Bruun, L.; Houen, G. (1)
CORPORATE SOURCE: (1) Dep. Autoimmunol., Statens Seruminstitut, Building 81, Artillerivej 5, DK-2300 Copenhagen S Denmark
SOURCE: Analytical Biochemistry, (1996) Vol. 233, No. 1, pp. 130-136.
ISSN: 0003-2697.
DOCUMENT TYPE: Article
LANGUAGE: English
AB In need of a simple and sensitive method for detection of diamine oxidase (EC 1.4.3.6) activity in connection with diamine oxidase purification from human placenta, we have developed an enhanced **chemiluminescence** method using putrescine as **substrate** and horseradish peroxidase and luminol for the detection of the H-2O-2 produced by diamine oxidase, The method allows direct detection of small amounts of diamine oxidase in serum samples after agarose gel electrophoresis and allows visualization of diamine oxidase activity in tissue sections. Employing this method we have detected diamine oxidase in sera from cow, horse, monkey, rabbit, and pregnant women. On tissue sections from term human placenta diamine oxidase activity was exclusively localized to the maternal side and was concentrated in **vessels** and fibrinoid areas.

L22 ANSWER 11 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1994:307334 BIOSIS
DOCUMENT NUMBER: PREV199497320334
TITLE: Influence of an anti-oxidant on the formation of allergenic compounds during **auto**-oxidation of d-limonene.
AUTHOR(S): Karlberg, A.-T. (1); Magnusson, K.; Nilsson, U.
CORPORATE SOURCE: (1) Dep. Occupational Dermatology, National Inst. Occupational Health, S-17184 Solna, Stockholm Sweden
SOURCE: Annals of Occupational Hygiene, (1994) Vol. 38, No. 2, pp. 199-207.
ISSN: 0003-4878.
DOCUMENT TYPE: Article
LANGUAGE: English
AB Butylated hydroxytoluene (BHT), a common anti-oxidant, was added to different samples of d-limonene. The decrease in concentration of d-limonene and the formation of oxidation products were compared between the samples and with samples without anti-oxidant using gas chromatography. The aim of the study was to investigate how long d-limonene to which BHT was added could be handled when air-exposed at room temperature, without formation of oxidation products which according to previous studies increase the risk of skin sensitization. In experiments trying to mimic the handling of limonene products at workplaces the addition of BHT prevented **auto**-oxidation for periods depending on the purity of the products and on the room temperature. Cold and **dark** storage of d-limonene in closed **vessels** prevented **auto**-oxidation for 1 year without addition of anti-oxidant.

L22 ~~ANSWER 12 OF 32~~ BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1993[redacted]7424 BIOSIS
DOCUMENT NUMBER: PREV[redacted]396140831
TITLE: In situ determination of the reduction levels of cytochromes b and c in growing bacteria: A case study with nitrogen-fixing Azorhizobium caulinodans.
AUTHOR(S): Pronk, Annemieke F.; Boogerd, Fred C.; Stoof, Cor; Oltmann, L. Fred; Stouthamer, Adriann H.; Van Verseveld, Henk W.
CORPORATE SOURCE: Biol. Lab., Vrije Univ., Dep. Microbiol., De Boelelaan 1087, 1081 HV Amsterdam Netherlands
SOURCE: Analytical Biochemistry, (1993) Vol. 214, No. 1, pp. 149-155.
ISSN: 0003-2697.
DOCUMENT TYPE: Article
LANGUAGE: English

AB The determination of the in situ reduction levels of cytochromes b and c in growing bacteria is achieved by coupling a chemostat with a dual wavelength spectrophotometer. Visible light absorption spectra of cytochromes present in bacterial cells actively growing in a chemostat at a specific growth rate of 0.1 h-1 are recorded. This is accomplished by transporting the emitted light from the spectrophotometer via glass fibers to one side of the chemostat **vessel** and detecting the transmitted light via a **photomultiplier** at the other side. The **vessel** itself is enclosed in a **dark** box, which contains mirrors on the inside surfaces. The reduction levels of cytochromes b and c during steady state in chemostat cultures are expressed as percentage absorbance of fully reduced cytochromes in the alpha-region of the spectrum. Steady state spectra are recorded in N-2-fixing, succinate-limited continuous cultures of Azorhizobium caulinodans at dissolved oxygen tensions in the range between 0.1 and 3.5% O-2. Spectra of fully reduced cytochromes are obtained on the basis of spectra recorded after having reached anoxic conditions by sparging pure nitrogen gas through the culture. These spectra of cytochromes b and c reduced by endogenous **substrates** are corrected as to give the spectrum of fully reduced cytochromes. The respective contributions of cytochromes b and c to spectra in the a-region are estimated by deconvolution using best-fit analysis. Using this in situ technique it is observed that at each dissolved oxygen tension the reduction level of the cytochromes b is higher than that of the cytochromes c. The reduction level of cytochromes b is constant (52%) in the range of 0.1 to 2.0% O-2 and increases gradually to 64% in the range from 2.0 to 3.5% O-2. The reduction level of cytochromes c decreases from 34 to 28% over the range 0.1-0.5% O-2, increases from 28 to 42% in the range between 0.5 and 2.0% O-2, and remains constant (42%) from 2.0 to 3.5% O-2.

L22 ANSWER 13 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1993:384401 BIOSIS
DOCUMENT NUMBER: PREV199396059701
TITLE: Methodological approaches to the study of cellular chemiluminescence.
AUTHOR(S): Lobashevskii, A. L.; Davydova, N. V.
CORPORATE SOURCE: Div. Microbiol. Immunol., I.M. Sechenov Mosc. Med. Acad., Moscow Russia
SOURCE: Klinicheskaya Laboratornaya Diagnostika, (1992) Vol. 0, No. 11-12, pp. 54-58.
ISSN: 0869-2084.
DOCUMENT TYPE: Article
LANGUAGE: Russian
SUMMARY LANGUAGE: English

AB Spontaneous and activated luminol-dependent **chemiluminescence** of whole blood, leukocytic mass, polymorphonuclear leukocytes, mononuclear leukocytes, and splenocytes of mice was under study. Different

microorganisms were used for activation: nonopsonized Escherichia coli, Candida albicans, and opsonized Staphylococcus aureus. All the studied cellular elements have shown spontaneous **chemiluminescence** at the expense of adhesion to a solid **substrate** (bottom of the **cuvette**). The fluorescence was the most intensive when opsonized staphylococci were employed for activation. Study of activated **chemiluminescence** of murine splenocytes has revealed that changes in their fluorescence could be graphically presented as a curve with two peaks, the first on the second-third minute from the start of the experiment and the second, slow and more marked, on the 10th-12th minute. The results may be useful for both experimental and clinical studies; whole human blood may be used for screening analyses in the latter case.

L22 ANSWER 14 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1993:97783 BIOSIS
DOCUMENT NUMBER: PREV199395052979
TITLE: The microglial reaction in the rat hippocampus following global ischemia: **Immuno**-electron microscopy.
AUTHOR(S): Gehrmann, Jochen; Bonnekoh, Petra; Miyazawa, Takahito; Oschlies, Ute; Dux, Ernoe; Hossmann, Konstantin-Alexander; Kreutzberg, Georg W. (1)
CORPORATE SOURCE: (1) Dep. Neuromorphol., Max-Plank-Inst. Psychiatry, Am Klopferspitz 18A, W-8033 Martinsried Germany
SOURCE: Acta Neuropathologica, (1992) Vol. 84, No. 6, pp. 588-595.
ISSN: 0001-6322.
DOCUMENT TYPE: Article
LANGUAGE: English

AB Transient arrest of the cerebral circulation leads to neuronal cell death in selectively vulnerable regions of the central nervous system. It has recently been shown at the light microscopical level that neuronal necrosis is accompanied by a rapid microglial reaction in ischemia (Gehrmann et al. (1992) J. Cereb. Blood Flow Metab. 12:257-269). In the present study we have examined the postischemic microglial reaction in the dorsal rat hippocampus at the ultrastructural level using **immuno**-electron microscopy. Global ischemia was produced by 30 min of four-**vessel** occlusion and the microglial reaction then studied after 8, 24 and 72 h. In sham-operated controls microglial cells were not phagocytic; they were randomly distributed throughout the neutropil and occasionally made contacts with other structures such as dendrites in CA1.

Ultrastructural signs of activation were observed from 1 day postlesion onward. Reactive microglial cells were consistently seen to phagocytose degenerating neurons particularlyin the CA1 stratum pyramidale and in the CA4 sector. They were sometimes interposed between morphologically distinct types of CA1 neurons, i.e., "**dark**" (degenerating) and "pale" (surviving) types of neurons. Phagocytic microglial cells also became positive for major histocompatibility complex (MHC) class II antigens at these locations from 1 day after ischemia onward. Furthermore, activated microglial cells were frequent along degenerating dendrites in the stratum radiatum of CA1. After survival times of up to 72 h microglial cells, but not astrocytes, were occasionally observed to undergo mitosis. In addition to their random distribution across the neuropil, microglial cells were frequently observed in a perivascular position under normal conditions. These perivascular microglial cells rapidly expressed MHC class II antigen, extended broad cellular processes and showed signs of phagocytic activity from 1 day onward. These results demonstrate that upon ischemic injury microglial cells proliferate and are rapidly recruited to the site of injury. By virtue of their pronounced cytotoxic potential, microglial cells could be further involved in mediating tissue destruction in ischemia, thus constituting the main **immuneffector** cell

population in this hological state.

L22 ANSWER 15 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1993:49303 BIOSIS
DOCUMENT NUMBER: PREV199395025605
TITLE: Qualitative and quantitative changes in islet cells of **autotransplanted** pancreas in dogs in relation to glucose metabolism.
AUTHOR(S): Kaji, Hiromu (1); Inoue, Kazutomo; Yun, Mitsutoshi; Uchida, Kotaro; Sugiyama, Taketoshi; Tobe, Takayoshi
CORPORATE SOURCE: (1) First Dep. Surg., Fac. Med., Kyoto Univ., 54 Shogoin Kawara-cho, Sakyo-ku, Kyoto 606 Japan
SOURCE: Pancreas, (1992) Vol. 7, No. 6, pp. 642-648.
ISSN: 0885-3177.
DOCUMENT TYPE: Article
LANGUAGE: English
AB This study was conducted to clarify the quantitative and qualitative changes in the cells of the islets of Langerhans in the **autotransplanted** pancreas in dogs and to correlate these changes with alterations of glucose tolerance. The left lobe of a canine pancreas was transplanted into the left iliac fossa. The splenic **vessels** were anastomosed to the left iliac **vessels**. The pancreatic duct was left open to the peritoneal cavity. Open biopsies of the **autotransplanted** pancreas were performed 3, 7, 11, and 14 weeks after transplantation. The islets in the transplanted pancreas were examined ultrastructurally; B-cells, A-cells, and D-cells were identified **immunohistochemically** and their percentages were determined. Intravenous glucose tolerance tests were performed 3, 5, 7, 11, and 14 weeks after operation, and several indexes (K values and integrated response and increased values for baseline serum and **immunoreactive** insulin) were calculated. Fibrosis of the transplanted pancreas progressed after transplantation. The percentage of B-cells fell significantly (p lt 0.01), whereas that of A- and D-cells did not have significant changes. The ultrastructural study revealed an increase in collagen bundles, degranulation of B-cells, and marked preservation of A-cell granules 3 weeks after transplantation. B-cells with **dark** cytoplasm were found 7 weeks after operation. In contrast, clusters of immature B-cells were seen in some sections of the pancreas 14 weeks after **autotransplantation**. The integrated response in baseline serum was increased significantly (p lt 0.01), and the K value was decreased significantly (p lt 0.01) 11 weeks after **autotransplantation** when compared with the initial posttransplant period. On the other hand, 14 weeks after **autotransplantation**, neither the integrated response in baseline serum nor the K value showed significant difference from the initial posttransplant period. It may be that the trend toward slight recovery of glucose metabolism 14 weeks after **autotransplantation** was associated with the clusters of immature B-cells observed ultrastructurally, although the number of B-cells was relatively decreased. Further studies must be done to clarify this phenomenon.

L22 ANSWER 16 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1993:34514 BIOSIS
DOCUMENT NUMBER: PREV199395022714
TITLE: Potential genotoxicity of sediments from the Great Lakes.
AUTHOR(S): Johnson, B. Thomas
CORPORATE SOURCE: Natl. Fisheries Contaminant Res. Cent., Fish Wildlife Serv., U.S. Dep. Interior, Columbia, Mo. 65201
SOURCE: Environmental Toxicology and Water Quality, (1992) Vol. 7, No. 4, pp. 372-390.
ISSN: 1053-4725.
DOCUMENT TYPE: Article
LANGUAGE: English

AB Thirty-eight organi xtracts of sediment samples co ected from 28 sites in three Great Lake riority areas (Grand Calument er, Buffalo River, and Saginaw River) were evaluated with the new activated Mutatox Genotoxicity Assay. This in vitro procaryotic assay used rat hepatic S9 for exogenous metabolic activation and a **dark** mutant strain of the luminescent bacterium **Photobacterium** phosphoreum for detection of environmental DNA-damaging **substances** (genotoxins). A genotoxic response was indicated when the test **chemical** restored the luminescent state in bacteria; the degree of light increase identified the relative genotoxicity of the sample. Within the three priority areas sampled, 27 sites showed evidence of genotoxins, 23 of 28 sites (82%) were designated genotoxic; 4 were suspect (14%), and 1 was negative (3%). Assay sensitivity to known progenotoxins arylamines (2-aminoanthracene and 2-aminofluorene) and polycyclic arylhydrocarbons (benzo(a)pyrene and pyrene) in complex sediment mixtures was ltoreq 1 mu-g per **cuvette**. The activated Mutatox assay was a sensitive, specific, predictive, and short-term test for detecting the presence of genotoxins in complex environmental sediments.

L22 ANSWER 17 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1985:222917 BIOSIS
DOCUMENT NUMBER: BA79:2913
TITLE: TOPOLOGICAL ANALYSIS OF WALL MASS TRANSPORT USING A LUMINESCENT IMMOBILIZED ENZYMATIC SYSTEM.
AUTHOR(S): NAKACHE M; DIMICOLI J-L
CORPORATE SOURCE: INST. NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE/E.R.A. CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE 785, HOPITAL BROUSSAIS, 75674 PARIS, CEDEX 14, FR.
SOURCE: BIOPHYS J, (1984) 46 (3), 357-370. CODEN: BIOJAU. ISSN: 0006-3495.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB A new technique of visualization of diffusion-convection phenomena at a solid-liquid interface using the luminol **chemiluminescent** reaction catalyzed by immobilized peroxidase was previously described. A theoretical model is proposed that predicts quantitatively the light fluxes, JL, corresponding to the transfer J of the hydrogen peroxide **substrate** at the liquid-solid interface in a cylindrical tube for continuous flow experiments. A simple phenomenological relation, J .varies. .**GRAPHIC**. (1 < m < 3) was first established for each point of the wall. Then, numerical integration showed that, independent of the laminar or turbulent character of the flow, .**GRAPHIC**. was proportional to (S1 Kidedl)C1 + Kideal/ET), where S1 is the bulk **substrate** concentration, Kideal is the ideal transport coefficient, and ET (in cm .cntdot. s-1) a phenomenological first-order enzymatic rate constant per unit of wall surface. This relation proved to be satisfactory for all experimental conditions since a single mean value of ET takes into account the experimental data collected for a given enzymated tube in a large range of Reynolds number values (Re) (500 < Re < 9000) and of distances from the entrance of the tube (x > 0.3 cm). This quantitative analysis using a pseudo-first-order approximation interprets the observed great dependence of JL on Re(JL .varies. Ren', with n' usually > 1/3 for laminar flows) and on S1 (JL .varies. S1m). It predicts also that the laminar-to-turbulent transition can be evidenced for interfacial enzymatic activity, ET > 2.10-4 cm .cntdot. s-1, as observed with most of the tubes prepared by covalent binding of peroxidase on the acrylamide gel wall. The experiment had to be carried out at a pH value of 8, which corresponds to the fastest rate of the **chemiluminescent** reaction. The predicted

entrance effects were also observed experimentally for the first time in an immobilized enzyme system. This technique appears therefore to be a valuable tool for the quantitative analysis of diffusion-convection phenomena at a liquid-solid interface with a good spatial resolution with a great range of flow rate. [This system may model catalysis by enzymes located at the wall of blood **vessels**.]

L22 ANSWER 18 OF 32 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1980:214818 BIOSIS
DOCUMENT NUMBER: BA70:7314
TITLE: LOW LEVEL CHEMI LUMINESCENCE OF BOVINE HEART SUB MITOCHONDRIAL PARTICLES.
AUTHOR(S): CADENAS E; BOVERIS A; CHANCE B
CORPORATE SOURCE: JOHNSON RES. FOUND., SCH. MED. G4, UNIV. PA., PHILADELPHIA, PA. 19104, USA.
SOURCE: BIOCHEM J, (1980) 186 (3), 659-668.
CODEN: BIJOAK. ISSN: 0306-3275.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB Submitochondrial particles from bovine heart mitochondria showed low-level **chemiluminescence** when supplemented with organic hydroperoxides. **Chemiluminescence** seems to measure integratively radical reactions involved in lipid peroxidation and related processes. Maximal light-emission was about 1500 counts/s and was reached 2-10 min after addition of hydroperoxides. Ethyl hydroperoxide, cumene hydroperoxide and tert-butyl hydroperoxide were effective in that order. Antimycin and rotenone increased **chemiluminescence** by 50-60%; addition of **substrates**, NADH and succinate did not produce marked changes in the observed **chemiluminescence**. Cyanide inhibited **chemiluminescence**; half-maximal inhibitory effect was obtained with 0.03 mM cyanide and the inhibition was competitive with respect to t-butyl hydroperoxide. Externally added cytochrome c (10-20 .mu.M) had a marked stimulatory effect on **chemiluminescence**, namely a 12-fold increase in light-emission of antimycin-inhibited submitochondrial particles. Stimulation of hydroperoxide-induced **chemiluminescence** of submitochondrial particles by cytochrome c was matched by a burst of O2 consumption. O2 is believed to participate in the chain radical reactions that lead to lipid peroxidation. Superoxide anion seems to be involved in the **chemiluminescence** reactions as long as light-emission was 50-60% inhibitible by superoxide dismutase. Singlet-oxygen quenchers, e.g. .beta.-carotene and 1,4-diazabicyclo[2.2.2]-octane, affected light-emission. .beta.-Carotene was effective either when incorporated into the membranes or added to the **cuvette**. Singlet molecular oxygen is probably mainly responsible for the light-emission in the hydroperoxide-supplemented submitochondrial particles.

L22 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:348312 CAPLUS
DOCUMENT NUMBER: 131:141636
TITLE: Chemiluminescent detection of oxidants in vascular tissue: lucigenin but not coelenterazine enhances superoxide formation
AUTHOR(S): Tarpey, Margaret M.; White, C. Roger; Suarez, Edward; Richardson, Gloria; Radi, Rafael; Freeman, Bruce A.
CORPORATE SOURCE: Departments of Anesthesiology and the Center for Free Radical Biology, University of Alabama at Birmingham, Birmingham, AL, 35233, USA
SOURCE: Circ. Res. (1999), 84(10), 1203-1211
CODEN: CIRUAL; ISSN: 0009-7330
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Lucigenin-amplified chemiluminescence has frequently been used to assess the formation of superoxide in vascular tissues. However, the ability of lucigenin to undergo redox cycling in purified enzyme-**substrate** mixts. has raised questions concerning the use of lucigenin as an appropriate probe for the measurement of superoxide prodn. Addn. of lucigenin to reaction mixts. of xanthine oxidase plus NADH resulted in increased oxygen consumption, as well as superoxide dismutase-inhibitable redn. of cytochrome c, indicative of enhanced rates of superoxide formation. Addnl., it was revealed that lucigenin stimulated oxidant formation by both cultured bovine aortic endothelial cells and isolated rings from rat aorta. Lucigenin treatment resulted in enhanced hydrogen peroxide release from endothelial cells, whereas exposure to lucigenin resulted in inhibition of endothelium-dependent relaxation in isolated aortic rings that was superoxide dismutase inhibitable. In contrast, the chemiluminescent probe coelenterazine had no significant effect on xanthine oxidase-dependent oxygen consumption, endothelial cell hydrogen peroxide release, or endothelium-dependent relaxation. Study of enzyme and vascular systems indicated that coelenterazine chemiluminescence is a sensitive marker for detecting both superoxide and peroxynitrite.

REFERENCE COUNT: 70
REFERENCE(S):
(1) Abrahamsson, T; Circ Res 1992, V70, P264 CAPLUS
(2) Archer, S; J Appl Physiol 1989, V67, P1912 CAPLUS
(3) Batinic-Haberle, I; Arch Biochem Biophys 1997, V343, P225 CAPLUS
(4) Beckman, J; Proc Natl Acad Sci U S A 1990, V87, P1620 CAPLUS
(5) Brawn, K; Acta Physiol Scand 1980, V492, P9 CAPLUS

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L22 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:556245 CAPLUS
DOCUMENT NUMBER: 129:286476
TITLE: Quantitative Polymerase Chain Reaction Based on a Dual-Analyte Chemiluminescence Hybridization Assay for Target DNA and Internal Standard
AUTHOR(S): Verhaegen, Monique; Christopoulos, Theodore K.
CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of Windsor, Windsor, ON, Can.
SOURCE: Anal. Chem. (1998), 70(19), 4120-4125
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have developed a dual-analyte **chemiluminescence** hybridization assay for quant. polymerase chain reaction (PCR). The method allows simultaneous detn. of both amplified target DNA and internal std. (IS) in the same reaction **vessel**. The target DNA from the sample (233 bp) was coamplified with a const. amt. of a recombinant DNA IS that had the same size and primer binding regions as the target DNA, differing only by a 24-bp sequence, centrally located. Biotinylated PCR products from target DNA and IS were captured on a single microtiter well coated with streptavidin. The amplified target DNA was hybridized with a digoxigenin-labeled specific probe, and the hybrids were detd. by using antidigoxigenin antibody labeled with aequorin. The amplified DNA IS was hybridized, in the same well, with a fluorescein-labeled probe, and the hybrids were detd. by using an antifluorescein antibody conjugated to alk. phosphatase. Aequorin was measured by adding a Ca2+-contg. light-triggering soln. Alk. phosphatase was measured by using a dioxetane chemiluminogenic **substrate**. The ratio of the luminescence values obtained from the target DNA and IS amplification products was linearly related to the no. of target DNA mols. present in the sample

prior to amplification. The linear range extended from 430 to 315 000 target DNA mols. [redacted] CVs ranged from 7 to 17%. The proposed system is expected to facilitate the automation and routine use of quant. PCR.

L22 ANSWER 21 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:422535 CAPLUS
DOCUMENT NUMBER: 127:169987
TITLE: Low temperature growth of amorphous and polycrystalline silicon films from a modified inductively coupled plasma
AUTHOR(S): Goto, Masashi; Toyoda, Hirotaka; Kitagawa, Masatoshi; Hirao, Takashi; Sugai, Hideo
CORPORATE SOURCE: Department of Electrical Engineering, School of Engineering, Nagoya University, Nagoya, 464-01, Japan
SOURCE: Jpn. J. Appl. Phys., Part 1 (1997), 36(6A), 3714-3720
CODEN: JAPNDE; ISSN: 0021-4922
PUBLISHER: Japanese Journal of Applied Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A conventional inductive radiofrequency discharge is modified by inserting antenna in a plasma **vessel** with magnetic multipole confinement, which gives a high-d. (.apprx.1011 cm-3) silane plasma at very low pressures (.apprx.1 mtorr). This new type of inductively coupled plasma (ICP) enables high-rate deposition (.apprx.1 nm/s) of a Si:H films at low **substrate** temps. of .apprx.100.degree., which have the **photocond**. of 10-5-10-4 S/cm and the **dark** cond. of 10-10-10-9 S/cm. Also, microcryst. or polycryst. Si films are formed on glass **substrates** at moderate temps. of 200-300.degree. where the **dark** cond. becomes comparable to the **photocond**. and the x-ray diffraction pattern shows sharp peaks corresponding to the Si cryst. surfaces. Mass spectrometric measurements of the highly dissocd. silane plasma show unique radical compns.; .apprx.90% of ions are H species (H3+, H2+, H+) while the d. of neutral radicals (SiH3, SiH2, SiH) is lower than that of ionic radicals (SiH3+, SiH2+, SiH+, Si+). Thus, the main precursor of growth from high-d. plasmas may be ionic radicals rather than neutral radicals.

L22 ANSWER 22 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1992:628228 CAPLUS
DOCUMENT NUMBER: 117:228228
TITLE: Potential genotoxicity of sediments from the Great Lakes
AUTHOR(S): Johnson, B. Thomas
CORPORATE SOURCE: Fish Wildlife Serv., Natl. Fish. Contaminant Res. Cent., Columbia, MO, 65201, USA
SOURCE: Environ. Toxicol. Water Qual. (1992), 7(4), 373-90
CODEN: ETWQEZ; ISSN: 1053-4725
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thirty-eight org. exts. of sediment samples collected from 28 sites in three Great Lakes priority areas (Grand Calumet River, Buffalo River, and Saginaw River) were evaluated with the new activated Mutatox Genotoxicity Assay. This in vitro prokaryotic assay used rat hepatic S9 for exogenous metabolic activation and a **dark** mutant strain of the luminescent bacterium, **Photobacterium** phosphoreum, for detection of environmental DNA-damaging **substances** (genotoxins). A genotoxic response was indicated when the test **chem**. restored the luminescent state in bacteria; the degree of light increase identified the relative genotoxicity of the sample. Within the three priority areas sampled, 27 sites showed evidence of genotoxins, 23 of 28 sites (82%) were

designated genotoxi[redacted]4 were suspect (14%), and 1 wa[redacted]neg. (3%). Assay sensitivity to know[redacted]progenotoxin arylamines (2-amin[redacted]nthracene and 2-aminofluorene) and polycyclic arylhydrocarbons [benzo(.alpha.)pyrene and pyrene] in complex sediment mixts. was .ltoreq.1 .mu.g per **cuvette**. The activated Mutatox Assay was a sensitive, specific, predictive, and short-term test for detecting the presence of genotoxins in complex environmental sediments.

L22 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1989:611399 CAPLUS
DOCUMENT NUMBER: 111:211399
TITLE: Particle-membrane capture methods
AUTHOR(S): Galloway, Richard
CORPORATE SOURCE: Part. Technol. Div., Seradyn, Indianapolis, IN, USA
SOURCE: Am. Clin. Lab. (1989), 8(8-A), 6
CODEN: ACLAE7
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two particle-membrane capture methods are described. One involves particles imbedded into or onto a membrane. The other involves a sep. reaction **vessel** with the contents ultimately poured over a membrane. The assays are usually configured as ELISA sandwich techniques.
The fundamental principle of the assay is the use of antibody (or antigen)-bound latex particles as the solid phase to detect the corresponding antigen or antibody in soln. The antibody bound to the surface of the particle captures the analyte (antigen) of interest in the patient specimen. A 2nd antibody (enzyme-linked, fluorescent, **chemiluminescent**, etc.) is added, and subsequently, so is a **substrate**. The resulting color (or fluorescence or luminescence) can be read visually (qual.) or in some instances, instrumentally (quant.). If the analyte is not present, the 2nd antibody will not bind; hence, no color develops and a neg. test is recorded.

L22 ANSWER 24 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1989:223220 CAPLUS
DOCUMENT NUMBER: 110:223220
TITLE: Electron cyclotron resonance plasma treatment and apparatus therefor
INVENTOR(S): Fukuda, Takuya; Mochizuki, Yasuhiro; Monma, Naohiro; Sonobe, Tadashi
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63289925	A2	19881128	JP 1987-123847	19870522

AB The title method is characterized by alignment of a no. of **substrates** vertical to the direction of propagation of the microwave in the vacuum chamber for simultaneous treatment of the **substrates**. Thus, amorphous Si films were deposited on Si wafers held on a holder which was shifted along and rotated around the center axis of the **vessel** from supply of He and SiH4. Deviations of **dark** cond. and **photocond.** of the wafers located at the ends of the holder were 2% with motion of the holder and 4% without the motion.

L22 ANSWER 25 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1975:510849 CAPLUS
DOCUMENT NUMBER: 83:110849

TITLE: Apparatus for analysing liquid substances likely to form agglutinates
INVENTOR(S): Matte, Claude
PATENT ASSIGNEE(S): Centre National de la Recherche Scientifique, Fr.; Centre National de transfusion Sanguine
SOURCE: U.S., 25 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3883308	A	19750513	US 1973-393996	19730904
FR 95147	E	19700615	FR 1968-145043	19680322
BE 714145	A	19680916	BE 1968-714145	19680424
CH 505381	A	19710331	CH 1968-505381	19680429
GB 1229971	A	19710428	GB 1968-1229971	19680429
US 3617222	A	19711102	US 1968-728189	19680509
SE 364367	B	19740218	SE 1968-6273	19680509
NL 6806681	A	19681113	NL 1968-6681	19680510
NL 156819	B	19780516		
JP 51016798	B4	19760527	JP 1968-31021	19680510
PRIORITY APPLN. INFO.:			FR 1967-106180	19670512
			FR 1968-145043	19680322
			US 1968-728189	19680509
			US 1971-163936	19710719

AB The present invention permits the **automatic** examn. of reactions that are useful in hematol., serol., bacteriol. and **chem**. Thus, for example, the app. permits the detn. of a blood group of an individual by means of several complementary reactions, each using an agglutination of erythrocytes. The agglutinations can be detected either by nephelometry or by opacimetry. The app. consists of an annular planar shaped support for **vessels** contg. liq. samples to be analyzed. The support has perforations for receiving the **vessels**. The perforations are placed angularly and radially throughout the entire area of support. Each of the **vessels** is scupola-shaped with **opaque** side walls and a transparent bottom. The liq. **substance** to be analyzed along with a reagent that will cause agglutination are placed in the **vessel** and subjected to 2 successive agitations. The 1st agitation has a greater speed and the 2nd a slower speed than a certain crit. speed. This will place the macroagglutinates near the center of the transparent bottom from which point they can be measured by turbidimetry.

L22 ANSWER 26 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1972:38807 CAPLUS
DOCUMENT NUMBER: 76:38807
TITLE: Adsorption properties of lead sulfide **photosensitive** layers
AUTHOR(S): Biryulev, V. I.
CORPORATE SOURCE: USSR
SOURCE: Opt.-Mekh. Prom. (1971), 38(11), 67-8
CODEN: OPMPAQ
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The adsorption properties of PbS cryst. layers, prepd. by different processes, were compared. These processes were: **chem**. deposition, thermal evapn. under vacuum followed by a high-temp. activation in air at atm. pressure, and evapn. of a parent **substance** in a glass ampul with sensitization of the layer by a low-pressure O atm. The samples were inserted in a glass **vessel** equipped with outlets enabling CO to be filled or discharged. The ohmic resistance of the 3 samples compared was measured simultaneously. The **dark** resistance, the delay, and the **photocond**. of the

vacuum-prepd. layers were considerably influenced by changes in the pressure and compn. of the atm. The change in the d.c. resistance was much lower with 2 other layers under the same conditions. The vacuum-prepd. layers were most suitable for investigation of the mechanism of the **chemisorption**, as well as for a study of the dependence of the elec. and **photoelec**. properties of semiconductor layers in processes brought about on the semiconductor surface during absorption of gases. Treatment of these layers by activating gases seemed to be useful for setting the optimum conditions to obtain high cond. layers.

L22 ANSWER 27 OF 32 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1967:63880 CAPLUS
DOCUMENT NUMBER: 66:63880
TITLE: Biological action of free radicals that are generated in peroxidase reaction
AUTHOR(S): Klipson, N. A.; Mamedov, T. G.
SOURCE: Tr. Mosk. O-va. Ispyt. Prir. (1966), 16, 225-7
CODEN: TMPBAX
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB A series of expts. was carried out to confirm the possibility of radicals of normal metabolism becoming biol. noxious under certain conditions. Peroxidase oxidn. of pyrogallol, with the formation of free radicals, was used as the biochem. reaction. Biol. activity of free radicals of the peroxidase reaction was evaluated by their effect on the life-time of yeast cells (Saccharomyces vini). A suspension of 2-3-day yeasts (106 cells) was transferred into a reaction **vessel** with the addn. of all components of the peroxidase reaction. Life-time of the yeasts was detd. after 24 hrs. at 30.degree. in microcolonies. The concn. of free radicals was detd. with the **chemiluminescence** method. The peroxidase reaction exhibited a strong noxious action on yeast cells. In the concns. used, neither individual components nor final products had any visible effect on the death rate of the cells. It may be concluded that the destructive action of the peroxidase reaction on the cells was produced by free radicals formed from the oxidized **substrate**. It was confirmed that this effect was brought about by the stage of the peroxidase reaction which was responsible for **chemiluminescence**. Inhibitors of free radicals suppressed **chemiluminescence** and had a protective effect on yeast cells. Free radicals formed in normal biochem. reactions in vivo may become, under certain conditions, noxious for the same biol. system.

L22 ANSWER 28 OF 32 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 2000014943 EMBASE
TITLE: Mammalian Cu-containing amine oxidases (CAOs): New methods of analysis, structural relationships, and possible functions.
AUTHOR: Houen G.
SOURCE: APMIS, Supplement, (1999) 107/96 (5-46).
Refs: 464
ISSN: 0903-465X CODEN: APSUEN
COUNTRY: Denmark
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English; Danish

AB This thesis describes new and original experimental results on Cu-dependent amine oxidases (CAOs), which show that these enzymes can be conveniently and specifically detected in situ using a peroxidase-coupled activity staining method with 4-Cl-1-naphtole as hydrogen donor **substrate**. Even more sensitive in situ detection can be achieved using a **chemiluminescence**-based coupled peroxidase assay which was applied to show that human placenta CAO activity is confined to

maternal **vessels**. A general purification sceme for CAOs is described, and applied to purification of different CAOs. Peptide maps and **immunological** crossreactivity studies with monoclonal antibodies raised against the purified enzymes showed that they were closely related.

Amino acid sequence data for the bovine serum CAO showed that they form a separate group (E.C. 1.4.3.6) with no homology to other enzymes. A cDNA sequence was obtained on the basis of the amino acid sequence data, and this was found to encode a bovine lung CAO, related to bovine serum CAO. The genes for bovine lung and bovine serum CAO are characterised, and Southern blotting analysis of bovine chromosomal DNA shows the existence of a least one more bovine CAO. The purification of human neutrophil CAO is attempted, but it is described how lactoferrin, a protein with many properties in common with CAOs, and with a low degree of sequence identity can account for many observations on human neutrophil CAO. The products of bovine serum CAO oxidation of polyamines are characterised, and 3-aminopropanal is found to be the principal aminoaldehyde produced. Finally, a polyamine-stimulated binding of human placenta CAO to single-stranded DNA is described, and it is reported that the DNA-bound CAO is enzymically active and that the oxidation of DNA-bound polyamines leads to degradation of DNA. In addition to the experimental results, the properties of polyamines and Cu- dependent amine oxidases are reviewed. The polyamines spermidine and spermine interact specifically with nucleic acids and several other molecules. They are synthesised from putrescine, which is a key regulatory molecule formed from ornithine by ornithine decarboxylase, a highly inducible and regulated enzyme. The polyamines can be converted to putrescine by CAOs or spermidine/spermine acetyltransferase and polyamine oxidase. Putrescine is degraded by CAOs, which are also involved in degradation of histamine, a mediator of inflammatory processes. CAOs catalyse the general reaction: R1CH2NHR2 + O2 + H2O .fwdarw. R1CHO + R2NH2 + H2O2 and in addition to the catabolism of putrescine and histamine CAOs are involved in regulation of growth and apoptosis by to the generation of aminoaldehydes and hydrogen peroxide which have growth inhibitory properties. Several homologous CAOs have been purified and characterised and they form a family with two subgroups. They are homodimers with a relative molecular weight of 180000 and contain Cu2+ and a modified tyrosine, topaquinone, in the active site. CAOs are present in most tissues with highest amounts in intestine, kidneys, liver and placenta, but the cellular distributions and functions of CAOs are still poorly described, partly due to the use of many different assays and partly due to a broad **substrate** specificity of the enzymes. However, polyamines and CAOs seem to form a universal system contributing to regulation of growth, differentiation, and apoptosis.

L22 ANSWER 29 OF 32 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 1999299930 EMBASE
TITLE: Effects of topical .alpha.1-and .beta.2-adrenoceptor stimulants on nasal nitric oxide level.
AUTHOR: Kai T.
CORPORATE SOURCE: Dr. T. Kai, Second Dept. of Otorhinolaryngology, Toho University School of Medicine, Tokyo, Japan
SOURCE: Journal of Otolaryngology of Japan, (1999) 102/7 (898-906).
Refs: 25
ISSN: 0030-6622 CODEN: JOJAA6
COUNTRY: Japan
DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 011 Otorhinolaryngology
037 Drug Literature Index
LANGUAGE: Japanese
SUMMARY LANGUAGE: English; Japanese
AB The effects of locally administered .alpha.1- and .beta.2-stimulants (naphazoline and salbutamol) on the nasal nitric oxide (NO) level were investigated. Twenty-four healthy volunteers (except nasal allergy) were subjected to the examination. First, nasal cavity air was sampled continuously from the right nostril for 20 seconds at the rate of 3.51/m, and NO-free air was supplied passively to the left nostril. During the sampling time, subjects were made to hold their breath at deep inspiration, which obviated the effect of lower airways by closing their glottises. The sampled air was analyzed using a **chemiluminescence** technique for NO detection. In addition, nasal airway resistances (NAR) were estimated by a rhinomanometer, and minimum cross-section area (MCA) and nasal cavity volume (NCV) were estimated by an acoustic rhinometer. After these estimations, 12 subjects received naphazoline nitrate 15 .mu.g per nostril, and the other 12 subjects received salbutamol sulfate 100 .mu.g per nostril. Finally, after 15 minutes rest, these four parameters were reviewed. The results demonstrated that naphazoline significantly decreased NO concentration and NAR, and increased NCV. Furthermore, salbutamol significantly increased NO concentration and NAR, and decreased MCA and NCV. The changes in NAR, MCA and NCV indicated that nasal mucosa became contracted and swollen by topical naphazoline and salbutamol application. Naphazoline, a nasal decongestant, contracts nasal **vessels** by stimulating .alpha.1-adrenoceptors, whereas salbutamol dilates then by stimulating .beta.2-adrenoceptors, and this vasodilation does not intervene NO and cyclic GMP. Thus, nasal NO concentration is significantly affected by the change of blood supply caused simply by vasocontraction and vasodilation. In conclusion, it appeared that nasal NO concentration was possibly altered by the change of nasal blood supply, moreover, by the change in the supply of NO **substrate**.

L22 ANSWER 30 OF 32 MEDLINE
ACCESSION NUMBER: 2000133683 MEDLINE
DOCUMENT NUMBER: 20133683
TITLE: Mammalian Cu-containing amine oxidases (CAOs): new methods of analysis, structural relationships, and possible functions.
AUTHOR: Houen G
CORPORATE SOURCE: Statens Serum Institut.
SOURCE: APMIS. SUPPLEMENTUM, (1999) 96 1-46. Ref: 457
Journal code: APZ. ISSN: 0903-465X.
PUB. COUNTRY: Denmark
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 200004
ENTRY WEEK: 20000404
AB This thesis describes new and original experimental results on Cu-dependent amine oxidases (CAOs), which show that these enzymes can be conveniently and specifically detected in situ using a peroxidase-coupled activity staining method with 4-Cl-1-naphtole as hydrogen donor **substrate**. Even more sensitive in situ detection can be achieved using a **chemiluminescence**-based coupled peroxidase assay which was applied to show that human placenta CAO activity is confined to maternal **vessels**. A general purification scheme for CAOs is described, and applied to purification of different CAOs. Peptide maps and **immunological** crossreactivity studies with monoclonal antibodies raised against the purified enzymes showed that they were closely related.

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L22 ANSWER 31 OF 32 MEDLINE
ACCESSION NUMBER: 96315205 MEDLINE
DOCUMENT NUMBER: 96315205
TITLE: The use of **substrates** with 7-amino-3-trifluoromethylcoumarine (AFC) leaving group in the localization of protease activities in situ.
AUTHOR: Lojda Z
CORPORATE SOURCE: Laboratory of Histochemistry, 1st Faculty of Medicine, Charles University, Prague, Czech Republic.
SOURCE: ACTA HISTOCHEMICA, (1996 Apr) 98 (2) 215-28. Journal code: 0UO. ISSN: 0065-1281.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199703
AB A method for the localization of activities of proteases using **substrates** with 7-amino-3-trifluoromethylcoumarine (AFC) leaving group is described. 0.1 ml of 5-20 mMol solution of the respective

substrate (Gly-Pro-[redacted]C, Ala-Pro-AFC, Z-Ala-Arg-Arg-A[redacted]
Z-Gly-Arg-Arg-AFC, [redacted]Gly-Gly-Arg-AFC, D-Val-Leu-Lys-[redacted]C) in dimethylsulfoxide or dimethylformamide was added to 0.9 ml of 0.1 M Tris-HCl buffer, pH 7.4-7.8 or 0.1 M cacodylate buffer, pH 5-5.5. In the case of Z-Ala-Arg-Arg-AFC (cathepsin B **substrate**) 15 mM EDTA and 12 mM dithiothreitol were added. 7 mM amiloride or 2 mg/1 ml aprotinin were used as inhibitors with Z-Gly-Gly-Arg-AFC (urokinase **substrate**) and with D-Val-Leu-Lys-AFC (plasmin **substrate**). **Substrate** solutions were mixed with an equal amount of 2% agar solution in distilled water or in the respective buffer the pH of which was adjusted according to the pH optimum of the enzyme to be demonstrated. The agar solution was kept in a water bath at a temperature of 50-60 degrees C. After careful mixing, the **substrate** solution in agar was poured into a cylindrical **vessel** closed with a semipermeable membrane (Nephrophan) on which unfixed cryostat sections were mounted. 1-5 mM AFC solution in dimethylsulfoxide or dimethylformamide instead of the **substrate** was used as the control. Quenched samples of rat kidney and jejunum, biopsies of human jejunal mucosa, and of colorectal and uterine tumors were employed for the preparation of sections. After gelification of the medium in a refrigerator the **vessels** with sections were incubated in the **dark** at 37 degrees C for 0.5-several h. The reaction was controlled in a fluorescence microscope with an epiillumination adjusted to the FITC fluorescence and documented. A yellowish green fluorescence depicts sites where AFC was set free (sites with enzyme activity). When the reaction reached the required intensity the membranes were cut off, transferred to glass slides, mounted in glycerol, observed and **photographed** immediately (due to the solubility of AFC in glycerol). An acceptable cellular localization was achieved. The method with AFC **substrates** can be recommended for comparative biochemical and histochemical studies of proteases using the same **substrate** and for cases in which no other reliable procedure for the localization of the respective enzyme activity is available (e.g. urokinase, plasmin).

L22 ANSWER 32 OF 32 MEDLINE
ACCESSION NUMBER: 94085102 MEDLINE
DOCUMENT NUMBER: 94085102
TITLE: Optical mapping of inner retinal tissue PO2.
AUTHOR: Zuckerman R; Cheasty J E; Wang Y
CORPORATE SOURCE: Biomedical Engineering and Science Institute, Drexel University, Philadelphia, PA 19104..
CONTRACT NUMBER: EY05461 (NEI)
SOURCE: CURRENT EYE RESEARCH, (1993 Sep) 12 (9) 809-25.
Journal code: DUB. ISSN: 0271-3683.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199403

AB A high resolution optical mapping procedure was developed to visualize oxygen concentration levels topographically within the tissue of the inner retina in vivo. The novel optical mapping procedure has the potential for describing oxygen metabolism in retinal and other body tissues and elucidating the coupling of metabolism to function. The method is based upon the fluorescence quenching by molecular oxygen of a lipid soluble probe **substance** which accumulates within the lipid bilayers of tissue cells. The optical mapping system can provide more than 300,000 values of tissue PO2 in space with millisecond time resolution. Optical maps of inner retinal tissue PO2 were imaged under conditions of normoxia, hyperoxia, and for a retina which received restricted panretinal **photocoagulation**. Moreover, the effects of transient increases in intraocular pressure were also investigated. An O2 consumption rate of

5.48 +/- 0.50 (SEM) x 10(-3) ml O2/ml tissue/min for the light-adapted rat
inner retina was estimated from the application of a Krogh cylinder diffusion model to tissue PO2 gradients measured in the capillary-free zone around arterioles. Similarly, arterioles oxygenated a surrounding cylinder of tissue with a mean radius of 144.73 +/- 5.52 (SEM) microns. Histograms of PO2 values within inner retinal tissue (mean PO2 = 25.03 mm Hg, median = 24.58 mm Hg) showed remarkable correspondence to those determined invasively in brain by others, using O2 microcathodes, possibly
suggesting a similarity in the underlying capillary architectures of the two neural tissues.(ABSTRACT TRUNCATED AT 250 WORDS)